



Designation: D868–85(Reapproved2003)

## Standard Test Method for Evaluating Degree of Bleeding of Traffic Paint Designation: D868 – 10

### Standard Practice for Determination of Degree of Bleeding of Traffic Paint<sup>1</sup>

This standard is issued under the fixed designation D868; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

#### 1. Scope

1.1 The photographic reference standards that are part of this test method are representative of the degrees of bleeding of traffic or pavement marking paints. The standards are intended primarily for comparative evaluation in the laboratory.

1.2 Bleeding as defined is the only type of discoloration in this test method.

1.1 This practice describes test procedures for determining the degree of bleeding of traffic or pavement marking paints. A specific formulation for a solventborne traffic paint formulation is included as a potential bleeding reference control

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

#### 2. Referenced Documents

2.1 ASTM Standards:<sup>2</sup>

D969 Test Method for Laboratory Determination of Degree of Bleeding of Traffic Paint

2.2 ASTM Adjuncts:

D 868 Bleeding resistance of paint (one photo)<sup>2</sup> 226 Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing

D227 Specification for Coal-Tar-Saturated Organic Felt Used in Roofing and Waterproofing

D476 Classification for Dry Pigmentary Titanium Dioxide Products [\(1\)](#)

D867 Specification for Pumice Pigment<sup>3</sup>

D1199 Specification for Calcium Carbonate Pigments

D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

E1347 Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

#### 3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *bleeding characteristic*—that condition of discoloration manifested in traffic paint when applied to tar or asphaltic-type substrates. The number assigned to evaluate the degree of bleeding failure represents in these reference standards a measure of the contrast between the color of the dry film on a nonbleeding surface and the color of the dry film on the test surface. *bleeding characteristic, n*—that condition of discoloration manifested in traffic paint when applied to tar or asphaltic-type substrates.

3.1.1.1 *Discussion*—The amount of discoloration can be comparing the color of the test coating and a specific reference coating

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<sup>2</sup> Copies of the pictorial photographic reference standards are contained in the publication *Pictorial Standards of Coating Defects*, and may be obtained from ASTM International Headquarters (order Adjunct ADJ0868) or the Federation of Societies for Coating Technology, 492 Norristown Rd., Blue Bell, PA 19422. The original source of the photographic reference standards illustrated in Fig. 1 is the Federation.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>4</sup> Withdrawn. The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

using colorimetric measurements or by visual comparison to the amount of bleeding in a reference photograph.

#### 4. Significance and Use

4.1 Solvents in a traffic paint may cause bleeding of pavement constituents into the traffic marking, thereby rendering the traffic marking less effective as a lane or directional indicator. This test method in conjunction with the method for panel preparation in Test Method D969 is used to evaluate such bleeding properties. The evaluation is very subjective and raises questions as to the usefulness of the results for specification compliance.

4.1 Solvents in a traffic paint may cause bleeding of pavement constituents into the traffic marking, thereby rendering the traffic marking less effective as a lane or directional indicator. This practice describes how to prepare a panel of the coating to be tested and a reference panel coated with a specific solventborne traffic paint to be used as a control for evaluation.

4.2 This practice can be particularly useful for evaluation of solventborne traffic paints, but it may also be used for other types of traffic markings including waterborne traffic paints.

4.3 Two basic procedures are described for measuring the amount of bleeding. The procedure used shall be agreed upon by the purchaser and seller.

#### 5. Use of Photographic Reference Standards

5.1 The photographic reference standards that are part of this test method<sup>2</sup> are representative of the degrees of bleeding of traffic or pavement marking paints. The photograph in Apparatus

5.1 *Film Applicator*—A conventional type drawdown gage that casts a film having a minimum width of 50 mm (2 in.) and an approximate wet thickness of 380 μm (15 mils) (using an applicator clearance of approximately 760 μm (30 mils)).

5.2 *Test Panel for Coal-Tar Substrate*—A 127 by 254-mm (5 by 10-in.) piece cut from a standard roll of so-called “6.8-kg (15-lb) coal-tar saturated heat resistant or rag felt.” Unless otherwise specified, use a Specification D227 coal tar saturated felt.

5.3 *Test Panel for Asphalt Substrate*—A 127 by 254-mm (5 by 10-in.) piece cut from a standard roll of 6.8-kg (15-lb) asphalt-saturated felt. Unless otherwise specified, use a Specification D226 (Type 1) asphalt saturated felt.

5.4 *Paint Composition for Use as a Control*—The paint composition shown in Table 1 can be used as a control when applied to 6.8 kg (15 lb) felt. This formulation will show severe bleeding when applied on a coal tar substrate and a somewhat lower degree of bleeding when applied on the asphalt felt substrate.

#### 6. Preparation of Test Panels

6.1 Cut 125 by 255 mm (5 by 10 in.) pieces from a roll of coal tar or asphalt substrate. The specimens shall be cut at least 127 mm (5 in.) in from the edge.

6.2 Prepare the non-bleeding contrast surface by attaching a 25 mm (1 in.) of cellophane tape to the coal tar or asphalt substrate piece using firm pressure. The tape shall be positioned so that the outside edge is at least 25 mm (1 in.) from the edge and parallel to the edge of the substrate piece.

#### 7. Procedure

7.1 Place the test panel on a smooth flat surface (such as a glass panel), with the tape side up on the left, and hold in a flat position by weighting down the edges.

7.2 Draw the paint under test down over the specimen panel in such a manner that the entire width of the tape is covered, leaving the remainder of the film to the right of the tape in direct contact with the test panels. Apply the paint under test at a thickness to ensure complete hiding.

7.3 Keep the coated panel in a flat position until the film is set (after which the weights may be removed) and allow the coated panel to dry for 48 h at 21 to 27°C (70 to 80°F).

7.4 Immediately after completion of 48-h drying, determine the contrast in color between the portion of the film over the tape and that portion that is in direct contact with the test panels using one of the following two procedures. The procedure used shall be agreed upon by purchaser and seller.

**TABLE 1 Control Paint Formulation for Felt Substrates**

Material	Weight Percent
Titanium dioxide, TiO <sub>2</sub> (Classification D476, Type II, Class II)	15.40 %
Calcium carbonate, CaCO <sub>3</sub> , conforming to Specification D1199	44.00 %
Aluminum stearate (a 5 % mixture in toluene shall gel at temperatures below 49.9°C (120°F))	0.15 %
Pumice, No. 100 conforming to Specification D867	6.16 %
Alkyd resin solution, pure oxidizing 52 % modified soya oil, 50 % solution in 36 K.B. mineral spirits	29.89 %
V.M. & P. naphtha	3.78 %
Lead naphthenate, 24 %	0.40 %
Cobalt naphthenate, 6 %	0.09 %
Anti-skinning agent	0.13 %
Total	100.00 %